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34610	7590	05/05/2006	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			RIELLEY, ELIZABETH A	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/743,782

Applicant(s)

PARK ET AL.

Examiner

Elizabeth A. Rielley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 49-91 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 52-54, 69-78 and 90 is/are allowed.
- 6) ☒ Claim(s) 49, 51, 55, 57, 59, 61-63, 65, 66, 68, 79-83, 85, 86, 88, 89 and 91 is/are rejected.
- 7) ☒ Claim(s) 50, 56, 58, 60, 64, 67, 84 and 87 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date all.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

Amendment filed 1/13/2006 has been entered and considered by the Examiner. Claims 1-48 are canceled; claims 49-91 have been added. Currently, claims 49-91 are pending in the instant application.

### ***Claim Objections***

Claims 55, 57, and 69 objected to because of the following informalities: claim 55 states “a first metal electrode connected to the first *stripe* part”, however this is a typo since the claim refers to a “strip part” in the first paragraph. Claim 55 also states “extending from an end of second head part” at the very end; “the” needs to be added between “of” and “second”. Claim 57 states “a sustain electrode pair including transparent electrode pair”; “a” needs to be added between “including” and “transparent”. Claim 69 states “fourth portion within the discharge cell includes two *portion*”; the term “portion” needs to be plural. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

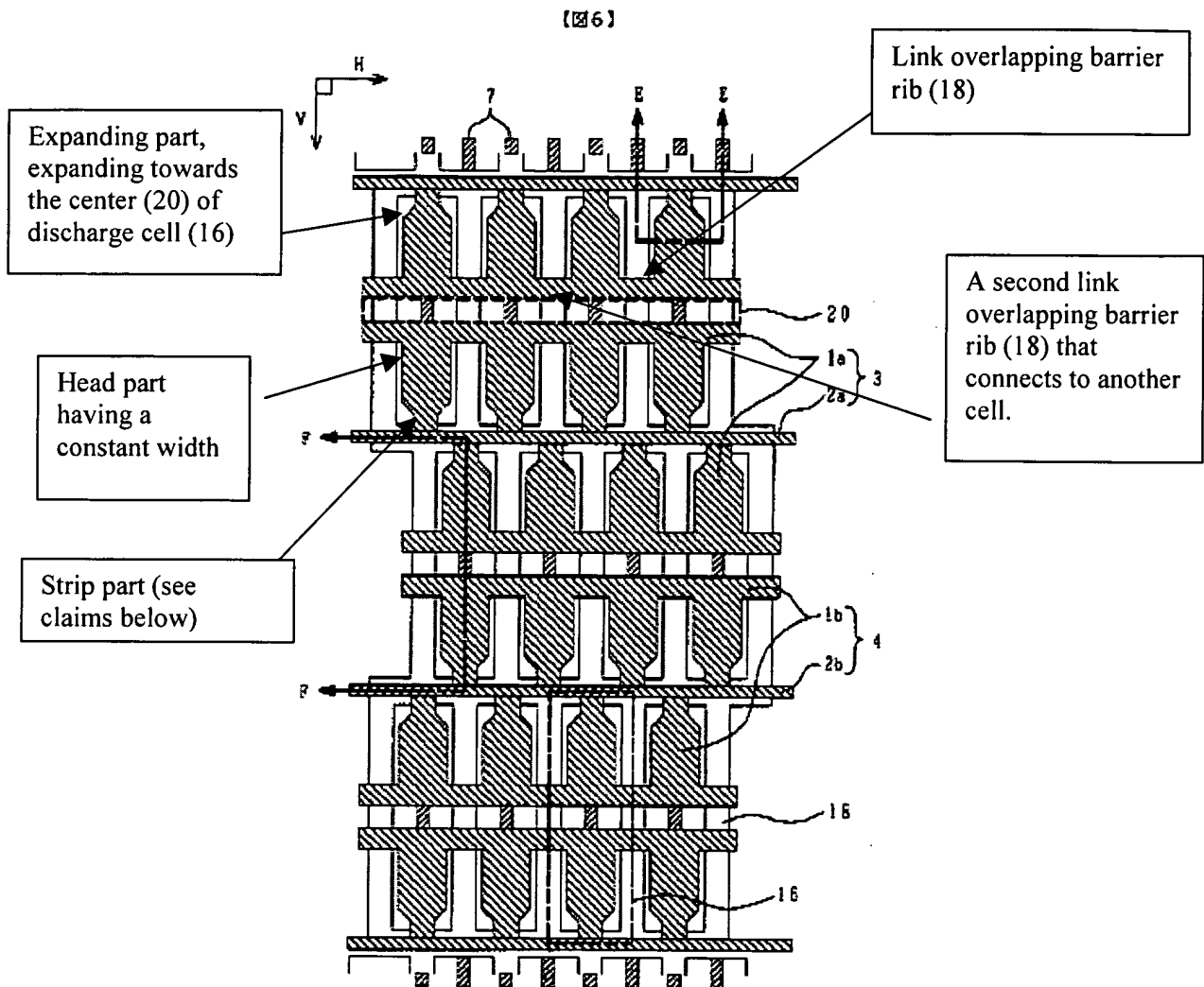
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 49, 51, 55, 57, 59, 61, 62, 63, 65, 66, 68, 79-83, 85, 86, 88, 89 and 91 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshida (JP 2001-325887).

In regard to claim 49, Yoshida ('887) teaches a plasma display panel (figure 6), comprising; a transparent electrode pair (1a, 1b; description of drawings) spaced with a predetermined gap there between within a discharge cell (gap 20 in cell 16; pair 1a, 1b on both sides of the gap; see figure 6), at least one transparent electrode of the transparent electrode pair including an expanding part (not numbered; see figure 6) having a width which enlarges towards a center of the discharge cell (towards gap 20; see figure 6 in cell 16), and a head part connected to the expanding part (not numbered; see figure 6) and having at least a substantially constant width (see figure 6); a barrier rib for dividing the discharge cell with an adjacent discharge cell (18; figure 6); a metal electrode formed in a first direction, and electrically coupled to the expanding part (2a; figure 6; description of drawings); an address electrode (7) provided in parallel to the barrier rib (18; see figure 6) in a second direction different from the first direction such that the address electrode crosses the metal electrode (see figure 6); and a link (not numbered; see figure 6) overlapping the barrier rib for connecting to a transparent electrode (1a) of the end of the head part toward the expanding part (see figure 6).



In regard to claim 51, Yoshida ('887) teaches at least one transparent electrode (1a, 1b) further includes a strip part (not numbered; see figure 6) connected with the expanding part (not numbered; see figure 6) and connected to the metal electrode (2a).

In regard to claim 55, Yoshida ('887) teaches a plasma display panel (figure 6), comprising: a first transparent electrode (1a) having a first head part (not numbered) protruding from one side of a

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discharge cell (16) into a center of the discharge cell (gap 20 is the center of the discharge cell), and a first strip part (not numbered) connected to the first head part (see figure 6); a second transparent electrode (1b) which includes an expanding part (not numbered) having a larger width as it goes from the other side thereof (see figure 6) within the discharge cell (16) into the center of the discharge cell (20) in such a manner to be spaced by a predetermined gap (20) from the first transparent electrode within the discharge cell, and a second head part (not numbered) connected to the expanding part and having a substantially constant width (see figure 6), and a second strip part (not numbered) connected to the expanding part (see figure 6); a first metal electrode (2a) connected to the first strip part (part of 1a) and a second metal electrode (2b) connected to the second strip part (part of 1b), the first and second metal electrodes being formed in a first direction (see figure 6); a barrier rib (18) for dividing the discharge cell (16) from an adjacent discharge cell (see figure 6); an address electrode (7) provided in a second direction different from the first direction such that the address electrode crosses the first and second metal electrodes (see figure 6); a first link (not numbered) overlapping the barrier rib (18) for connecting to a transparent electrode of the adjacent discharge cell (see figure 6), the first link being formed at a first predetermined depth extending from an end of the first part toward the first strip part (see figure 6); and a second link (not numbered) overlapping the barrier rib (18) for connecting to another transparent electrode of the adjacent discharge cell (see figure 6), the second link being formed at a second predetermined depth extending from an end of the second head part toward the expanding part (not numbered; see figure 6).

In regard to claim 57, Yoshida ('887) teaches a plasma display panel (figure 6), comprising: a sustain electrode pair (3, 4) including a transparent electrode pair (1a, 1b) spaced with a predetermined gap (20) there between within a discharge cell (16), and a first metal electrode (2a) connected to one of the transparent electrode pair (1a) and a second metal electrode (2b) coupled to the other one of the transparent electrode pair (1b), the first and second metal electrodes being formed in a first direction (see

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figure 6), at least one transparent electrode of the transparent electrode pair including: a neck part (not numbered; described above as “strip part”) connected to the metal electrode (2a, 2b), an expanding part (not numbered) connected to the neck part and having a width which enlarges as it goes into a center of the discharge cell (see figure 6), and a head part (not numbered) connected to the expanding part and having a substantially constant width (see figure 6); a barrier rib (18) for dividing the discharge cell (16) from an adjacent discharge cell (16) and formed in a first direction (see figure 6); an address electrode (7) provided in a second direction different from the first direction such that the address electrode crossed the first and second metal electrodes (see figure 6); and a link (not numbered) overlapping the barrier rib (18) for connection to a transparent electrode (1a, 1b) of the adjacent discharge cell (also 1a, 1b; see figure 6), wherein the link is formed at a predetermined depth extending from an end of the head part toward the expanding part (see figure 6).

In regard to claim 59, Yoshida ('887) teaches a plasma display panel (figure 6), comprising: a pair of transparent electrodes (1a, 1b) having a predetermined gap (20) there between within a discharge cell (16; figure 6), wherein at least one of the said transparent electrodes includes: a stripe part (not numbered; described as a “strip” above), a head part protruding from the stripe part into a center of the discharge cell (not numbered; see figure 6), and a link (not numbered) overlapping a barrier (18) for connecting to a transparent electrode of an adjacent cell (see figure 6); a metal electrode (2a, 2b) connecting to the stripe part (not numbered; part of 1a, 1b) and formed in a first direction (see figure 6); and an address electrode (7) provided in a second direction crossing the metal electrode (see figure 6), wherein the link is formed at a predetermined depth extending from an end of the head part toward an expanding part (see figure 6).

In regard to claim 61, Yoshida ('887) teaches a plasma display panel (figure 6) comprising: an upper substrate (10; figure 3; paragraph 25) having a plurality of transparent electrodes (1a, 1b; figure 3; paragraph 25) and a plurality of bus electrodes (2a, 2b; figure 3; paragraph 2a; although Yoshida teaches these as "metal electrode" they are in fact bus electrodes<sup>1</sup>), each bus electrode being coupled to a corresponding transparent electrode and formed in a first direction (see figure 6), and a plurality of black layers (18; figure 6; paragraph 34), each black layer (18) being formed between adjacent bus electrodes (2a, 2b; see figure 6); a lower substrate (11; paragraph 25) facing the upper substrate by a prescribed distance (see figure 3), the lower substrate having a plurality of address electrodes (7; figure 2; paragraph 27; although Yoshida calls these electrodes "data electrodes" they are in fact address electrodes<sup>2</sup>) formed in a second direction different from the first direction such that the address electrodes (7) cross the bus electrodes (2a, 2b; see figure 6), a plurality of barrier ribs (13; figure 2; paragraph 26) forming discharge cells (15; paragraph 36), and a phosphor material (14R, 14G, 14B; paragraph 26) being formed between the barrier ribs (13; see figure 3), wherein at least one transparent electrode (1a, 1b; figure 6) comprises first (described as a "strip" part above), second (described as an "expanding" part above), third (described as a "head" part above), and fourth (described as a "link" part above) portions, wherein (1) the first portion ("strip" part) has a width narrower than the second, third and fourth portions (see figure 6), the first portion being extended to the second portion ("expanding" part) and electrically coupled to the bus (2a, 2b) electrode (see figure 6), and a narrowest width of the first portion is less than a widest width of the second portion, the third portion and the fourth portion (see figure 6), (2) the second portion (an "expanding" part) has a width which enlarges toward a center of a discharge cell, and the second portion is extended to the third portion (see figure 6), (3) the third (a "head" portion) portion has at least a substantially constant width, a widest width of the third portion is greater than a narrowest width of the second portion, and the third portion is extended to the fourth portion (see figure 6), and (4) the fourth

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<sup>1</sup> <http://www.clarycon.com/plasmatv/sanddis.html>



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portion (a “link” part) has a width wider than that of the third portion, the widest width of the fourth portion within the discharge cell (16) is greater than a widest width of second portion and the third portion (see figure 6).

In regard to claim 62, Yoshida ('887) teaches a corner formed between the third (“head” part) portion and fourth portion (the “link” part) has an angle near 90 degrees (see figure 6, the head part and the link part form a right angle).

In regard to claim 63, Yoshida ('887) teaches the fourth portion (the “link” part) includes at least one linking portion overlapping a corresponding barrier rib (18; figure 6) for connecting to a transparent electrode (1a, 1b) of an adjacent cell (16; see figure 6).

In regard to claim 65, Yoshida ('887) teaches the widest width of the first portion (not numbered; figure 6; the “strip” part of 1a, 1b) is less than a widest width of the second portion (the “expanding” part) and the third portion (the “head” part).

In regard to claim 66, Yoshida ('887) teaches the barrier ribs (13; figure 3) are formed in the second direction (see figures 3 and 6).

In regard to claim 68, Yoshida ('887) teaches the third portion (the “head”) has a largest length in the second direction (the formation of the address electrodes 7) compared to the first (the “strip”), the second (the “expanding” part), and the fourth (the “link” part) portions (see figure 6, the “head” is longer in the direction of electrodes 7 than the rest).

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<sup>2</sup> <http://www.clarycon.com/plasmatv/sanddis.html>

In regard to claim 79, Yoshida ('887) teaches a plasma display panel (figure 6) comprising: an upper substrate (10; figure 3; paragraph 25) having a plurality of transparent electrodes (1a, 1b; figure 3; paragraph 25) and a plurality of bus electrodes (2a, 2b; figure 3; paragraph 2a; although Yoshida teaches these as "metal electrode" they are in fact bus electrodes<sup>3</sup>), each bus electrode being coupled to a corresponding transparent electrode and formed in a first direction (see figure 6), and a plurality of black layers (18; figure 6; paragraph 34), each black layer (18) being formed between adjacent bus electrodes (2a, 2b; see figure 6); a lower substrate (11; paragraph 25) facing the upper substrate by a prescribed distance (see figure 3), the lower substrate having a plurality of address electrodes (7; figure 2; paragraph 27; although Yoshida calls these electrodes "data electrodes" they are in fact address electrodes<sup>4</sup>) formed in a second direction different from the first direction such that the address electrodes (7) cross the bus electrodes (2a, 2b; see figure 6), a plurality of barrier ribs (13; figure 2; paragraph 26) forming discharge cells (15; paragraph 36), and a phosphor material (14R, 14G, 14B; paragraph 26) being formed between the barrier ribs (13; see figure 3), wherein at least one transparent electrode (1a, 1b; figure 6) comprises first (described as a "strip" part above), second (described as an "expanding" part above), third (described as a "head" part above), and fourth (described as a "link" part above) portions, wherein (1) the first portion ("strip" part) has a width narrower than the second, third and fourth portions (see figure 6), the first portion being extended to the second portion ("expanding" part) and electrically coupled to the bus (2a, 2b) electrode (see figure 6), and a narrowest width of the first portion is less than a widest width of the second portion, the third portion and the fourth portion (see figure 6), (2) the second portion (an "expanding" part) has a width which enlarges toward a center of a discharge cell, and the second portion is extended to the third portion (see figure 6), (3) the third (a "head" portion) portion has at least a substantially constant width, a widest width of the third portion is greater than a narrowest width of the

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<sup>3</sup> <http://www.clarycon.com/plasmatv/sanddis.html>

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second portion, and the third portion is extended to the fourth portion (see figure 6), and (4) the fourth portion (a “link” part) has a width wider than that of the third portion, the widest width of the fourth portion within the discharge cell (16) is greater than a widest width of second portion and the third portion (see figure 6), wherein the barrier ribs (13; figure 3) forming the discharge cell (15) include a portion having at least an angle different from 90 degrees with respect to the bus electrode (2a, 2b; 13 in figure 3 is at an angle different from 90 degrees with respect to the bus electrode 2a, 2b; to differentiate, figure 14 shows the barrier rib 22 at an angle of 90 degrees to the bus electrode 2).

In regard to claim 80, Yoshida ('887) teaches the angle is greater than 0 and less than 90 degrees (see figure 3; the left hand barrier makes an angle less than 90 degrees with the bus electrode 2b).

In regard to claim 81, Yoshida ('887) teaches the angle is greater than 90 degrees and less than 180 degrees (see figure 3; the right hand barrier makes an angle greater than 90 but less than 180 degrees with the bus electrode 2a).

In regard to claim 82, Yoshida ('887) teaches a corner formed between the third (“head”) portion and the fourth portion (the “link”) has an angle near 90 degrees (see figure 6).

In regard to claim 83, Yoshida ('887) teaches the fourth portion (“link”) includes at least one linking portion overlapping a corresponding barrier rib (18) for connecting to a transparent electrode (1a, 1b) of an adjacent cell (16; see figure 6).

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<sup>4</sup> <http://www.clarycon.com/plasmatv'sanddis.html>

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In regard to claim 85, Yoshida ('887) teaches a widest width of the first portion ("strip" part) is less than a widest width of the second ("expanding" part) and the third ("head") portion (see figure 6).

In regard to claim 86, Yoshida ('887) teaches the barrier ribs (13; figure 3) are formed in the second direction (see figure 3).

In regard to claim 88, Yoshida ('887) teaches the third portion has a largest length in the second direction compared to the first, second and fourth portions (see figure 6; the "second" direction being the direction address electrodes 7 are made; the "head" part is longer than the other parts of the transparent electrode).

In regard to claims 89 and 91, Yoshida ('887) teaches the bus electrode (2a, 2b) is electrically connected to the first portion ("strip" part) near a central area of the first portion (see figure 6; paragraphs 25-26).

***Allowable Subject Matter***

Claims 52-54, 69-78, and 90 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 52, the reference of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 52, and specifically comprising the limitation a plasma display panel, comprising: a transparent electrode pair spaced with a predetermined gap there between

within a discharge cell, at least one transparent electrode of said transparent electrode pair including: an expanding part having a width which enlarges towards a center of the discharge cell, a head part connected to the expanding part and having at least a substantially constant width, and a strip part positioned at the discharge cell and connected with the expanding part; a metal electrode formed in a first direction and electrically coupled to the expanding part; a barrier rib for dividing the discharge cell with an adjacent cell; an address electrode provided in parallel to the barrier rib in a second direction different from the first direction such that the address electrode crosses the metal electrode, wherein the expanding part includes; a first side set to a range substantially equal to 50% to 150% of a width of the address electrode, a second side being opposite to the first side and having a larger width than the first side, and an inclined plane provided between the first side and the second side; and a link overlapping the barrier rib for connecting to a transparent electrode of said adjacent discharge cell, wherein said link is formed at a predetermined depth extending from an end of the head part toward the expanding part.

Regarding claims 53-54, claims 53-54 are allowable for the reasons given in claim 52 due to their dependency status from claim 52.

Regarding claim 69, the reference of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 69, and specifically comprising the limitation a plasma display panel comprising: an upper substrate having a plurality of transparent electrodes and a plurality of bus electrodes, each bus electrode being coupled to a corresponding transparent electrode and formed in a first direction, and a plurality of black layers, each black layer being formed between adjacent bus electrodes; a lower substrate facing the upper substrate by a prescribed distance, the lower substrate having a plurality of address electrodes formed in a second direction different from the first direction such that the address electrodes cross the bus electrodes, a plurality of barrier ribs forming discharge cells, and

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a phosphor material being formed between the barrier ribs, wherein at least one transparent electrode comprises first, second, third, and fourth portions, wherein (1) the first portion has a width narrower than the second, third and fourth portions, the first portion being extended to the second portion and electrically coupled to the bus electrode, and a narrowest width of the first portion is less than a widest width of the second portion and the third portion, (2) the second portion has a width which enlarges toward a center of a discharge cell, and the second portion is extended to the third portion, (3) the third portion has at least a substantially constant width throughout a length of the third portion, a widest width of the third portion is greater than a narrowest width of the second portion, and the third portion is extended to the fourth portion and (4) the fourth portion within the discharge cell includes two portions, each portion extending from a side of the third portion and having a length shorter than the length of the third portion and a width smaller than the second and third portions.

Regarding claims 70-78 and 90, claims 70-78 and 90 are allowable for the reasons given in claim 69 due to their dependency status from claim 69.

Claims 50, 56, 58, 60, 64, 67, 84, 87 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

Applicant's arguments filed 1/13/06 have been fully considered but they are not persuasive. Yoshida ('887) teaches a transparent electrode pair comprising a first (described as a "strip" part above), second (described as an "expanding" part above), third (described as a "head" part above), and fourth

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(described as a “link” part above) portions, wherein (1) the first portion (“strip” part) has a width narrower than the second, third and fourth portions (see figure 6), the first portion being extended to the second portion (“expanding” part) and electrically coupled to the bus (2a, 2b) electrode (see figure 6), and a narrowest width of the first portion is less than a widest width of the second portion, the third portion and the fourth portion (see figure 6), (2) the second portion (an “expanding” part) has a width which enlarges toward a center of a discharge cell, and the second portion is extended to the third portion (see figure 6), (3) the third (a “head” portion) portion has at least a substantially constant width, a widest width of the third portion is greater than a narrowest width of the second portion, and the third portion is extended to the fourth portion (see figure 6), and (4) the fourth portion (a “link” part) has a width wider than that of the third portion, the widest width of the fourth portion within the discharge cell (16) is greater than a widest width of second portion and the third portion (see figure 6). Therefore, all the limitations set forth are taught by the prior art of record.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

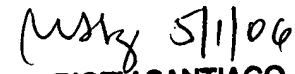
If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Elizabeth Rielley

Examiner  
Art Unit 2879

  
MARICELI SANTIAGO  
PRIMARY EXAMINER